

AMENDMENTS TO THE CLAIMS

The following is a complete listing of all the claims submitted in this application, including their present status and any current amendments. By this paper, claims 26 and 38 have been canceled, claims 27, 36-37 and 39-40 have been amended and claims 28-33 and 42 have been withdrawn from consideration. All claims canceled or withdrawn from consideration have been done so without prejudice and applicants reserve the right to pursue in continuing or divisional applications. Thus, claims 22-25, 27, 36-37 and 39-41 remain under consideration in this application.

LISTING OF CLAIMS

1-21 (canceled).

22 (previously presented). A plasticizer as in claim 36 comprising a citrate.

23 (previously presented). A plasticizer as in claim 22 wherein the citrate is acetyltriethyl citrate.

24 (previously presented). A plasticizer as in claim 22 wherein the citrate is acetyltri-n-butyl citrate.

25 (previously presented). A plasticizer as in claim 36 comprising an adipate.

26 (canceled).

27 (currently amended). A single base propellant free of high energy plasticizers comprising by weight:

- (a) from about 93 to about 97% high nitrogen nitrocellulose consisting nitrocellulose having an average N content of \geq 13.15% N (wt.);
- (b) from about 2-5% of a non-energetic plasticizer consisting of material selected from acetyltriethyl citrate, acetyltri-n-butyl citrate, triethyl citrate, tributyl citrate, diisobutyl adipate, diisoctyl adipate and mixtures thereof; and
- (c) about 2% dibutylphthalate.

28(withdrawn). A dinitrotoluene and dibutyl phthalate-free, single base propellant as in claim 37 comprising by weight:

- (a) from about 88% to about 90% high nitrogen nitrocellulose consisting of nitrocellulose having an average N content \geq 13.15% N;
- (b) from about 4% to about 10% of a non-energetic citrate plasticizer selected from acetyltriethyl citrate, acetyltri-n-butyl citrate, triethyl citrate, tributyl citrate and mixtures thereof; and
- (c) about 1% of ethyl centralite.

29(withdrawn). A propellant as in claim 28 further comprising about 1% by weight ethyl centralite.

30(withdrawn). A propellant as in claim 28 further comprising up to about 1% by weight of K_2SO_4 or KNO_3 .

31(withdrawn). A propellant as in claim 29 further comprising up to about 1% by weight of K_2SO_4 or KNO_3 .

32 (withdrawn). A propellant as in claim 28 wherein the citrate is acetyltriethyl citrate.

33 (withdrawn). A propellant as in claim 28 wherein the non-energetic plasticizer is present in an amount of about 10% by weight and the nitrocellulose is present in an amount of about 88% by weight.

34-35 (canceled).

36 (currently amended). A non-energetic plasticizer suitable for plasticizing high nitrogen nitrocellulose wherein said nitrocellulose has an average N content \geq 13.15%N (wt.) in a dinitrotoluene-free single base propellant formulation, which is suitable for use as a projectile-firing propellant, said plasticizer consisting of material selected from acetyltriethyl citrate, acetyltri-n-butyl citrate, triethyl citrate, tributyl citrate, ~~diisobutyl adipate~~, diisoctyl adipate and mixtures thereof, wherein said non-energetic plasticizer enables substitution of a non-energetic plasticizer for all high energetic plasticizers, including dinitrotoluene normally included in projectile-firing single base propellants, while maintaining a ~~desired level of mechanical~~ sufficient physical workability properties in the propellant formulation.

37 (currently amended). A single base propellant free of high energy plasticizers comprising by weight:

- (a) a major nitrocellulose fraction wherein the nitrocellulose fraction consists of nitrocellulose having an average N content \geq 13.15% N (wt.);
- (b) a minor fraction of a non-energetic plasticizer wherein the plasticizer comprises material selected from citrate and adipate compounds and combinations thereof selected from the group consisting of acetyltriethyl citrate, acetyltri-n-butyl citrate, triethyl citrate, tributyl citrate, diisobutyl adipate, diisoctyl adipate and mixtures thereof; and
- (c) an amount of a stabilizer compound.

38 (canceled).

39 (currently amended). A single base propellant as in claim
37 38 wherein said plasticizer contains a major fraction of acetyltriethyl citrate.

40 (currently amended). A single base propellant as in claim
38 37 wherein said stabilizer includes ethyl centralite.

41 (previously presented). A single base propellant as in claim 40 wherein said plasticizer contains a major fraction of acetyltriethyl citrate.

42 (withdrawn). A method of solubilizing and plasticizing high nitrogen nitrocellulose having an average N content \geq 13.15% N comprising the step of combining said nitrocellulose with a minor amount of a plasticizer consisting of material selected from citrate and adipate compounds and combinations thereof

selected from the group consisting of acetyltriethyl citrate, acetyltri-n-butyl citrate, triethyl citrate, tributyl citrate, diisobutyl adipate, diisoctyl adipate and mixtures thereof and an amount of acetone.